

What is claimed is:

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2       1.       An apparatus comprising:

3       a memory storage structure to hold a bundle of instructions;

4       a buffer, the buffer including an information field, the buffer further including a no-  
5       operation instruction (NOP) indicator field; and

6       folding logic to place, responsive to a NOP in the bundle, a “present” value in the NOP  
7       indicator field.

1       2.       The apparatus of claim 1, wherein:

2       the folding logic is further to allocate the information field for a non-NOP instruction in  
3       the bundle.

1       3.       The apparatus of claim 1, wherein:

2       the folding logic is to place, responsive to a first NOP in the bundle, a “present” value in  
3       the NOP indicator field; and

4       the folding logic is further to allocate the information field for a second NOP instruction  
5       in the bundle, responsive to all instructions in the bundle being NOP instructions.

1       4.       The apparatus of claim 1, wherein:

1 the memory storage structure is a queue to hold a plurality of bundles.

1 5. The apparatus of claim 1, wherein:

2 the buffer is to hold a plurality of entries.

1 6. The apparatus of claim 1, wherein:

2 the buffer entry includes a plurality of NOP indicator fields, the number of NOP indicator  
3 fields being  $n-1$ , where  $n$  is the number of instructions in the bundle.

1 7. The apparatus of claim 6, wherein:

2 each of the plurality of NOP indicator fields corresponds to an instruction in the bundle;  
3 and

4 the folding logic is to place, responsive to each of a plurality of NOP instructions in the  
5 bundle, a “present” value in the NOP indicator field corresponding to the respective NOP  
6 instruction.

1 8. The apparatus of claim 5, wherein:

2 the information field of each buffer entry is capable of holding a result of an instruction  
3 in the bundle.

1        9.            The apparatus of claim 5, wherein:  
2            the information field of each buffer entry is capable of holding a decoded instruction.

1        10.          The apparatus of claim 5, wherein:  
2            the information field of each buffer entry is capable of holding a decoded micro-  
3            operation.

1        11.          A method comprising:  
2            determining a number  $x$  of no-operation (NOP) instructions in a bundle, the bundle  
3            having a plurality ( $n$ ) of instructions, wherein  $0 \leq x \leq n$ ;  
4            allocating an entry in a buffer; and  
5            providing, if  $x > 0$ , a “present” value in an indicator field of the entry to specify a NOP  
6            instruction in the bundle.

1        12.          The method of claim 11, wherein allocating further comprises:  
2            if  $x = 0$ , allocating a corresponding entry in the buffer for each of the  $n$  instructions.

1        13.          The method of claim 11, wherein providing further comprises:  
2            providing, if  $x = n$ , a “present” value in each of  $n-1$  indicator fields of the entry to  
3            specify  $n-1$  NOP instructions in the bundle.

1        14.        The method of claim 11, wherein allocating further comprises:  
2                if  $0 < x < n$ , allocating a corresponding entry in the buffer for each of the  $x$  non-NOP  
3 instructions in the bundle.

1        15.        The method of claim 14, wherein providing further comprises:  
2                providing, if  $0 < x < n$ , for each NOP instruction in the bundle a “present” value in a NOP  
3 indicator corresponding to the NOP instruction, the corresponding NOP indicator being  
4 included in one of the  $x$  allocated buffer entries.

1        16.        A system, comprising:  
2                a dynamic random access memory to store a bundle, the bundle including a plurality of  
3 instructions; and  
4                folding logic to allocate a buffer entry for one of the instructions, wherein the buffer entry  
5 includes a NOP indicator field;  
6                the folding logic to place a “present” value in the NOP indicator field responsive to the  
7 presence of a NOP instruction in the bundle.

1        17.        The system of claim 16, wherein folding logic is further to allocate a buffer entry  
2                for a non-NOP instruction of the bundle.

1        18.        The system of claim 16, wherein folding logic is further to allocate a buffer entry  
2                    for a NOP instruction of the bundle.

1        19.        The system of claim 17, wherein the folding logic is further to place a “present”  
2                    value in the NOP indicator field responsive to the presence of a second NOP  
3                    instruction in the bundle.

1        20.        The system of claim 16, wherein:  
2                    the bundle includes n instructions;  
3                    the entry includes n-1 NOP indicator fields; and  
4                    folding logic is further to indicate the presence of a plurality x of NOP instructions in the  
5                    bundle, wherein  $2 \leq x \leq n-1$ , by placing a “present” value in each of x indicator fields .

1        21.        The system of claim 20, wherein:  
2                    folding logic is further to place the “present” value for a selected one of the x NOP  
3                    instructions into a selected one of the x indicator fields such that the selected indicator field  
4                    maps to the location of the selected NOP instruction within the bundle.